(No Model.)

E. E. CARTER.

CUTTER FOR MINING MACHINES.

No. 387,144. Patented July 31, 1888.

FIG. 1.

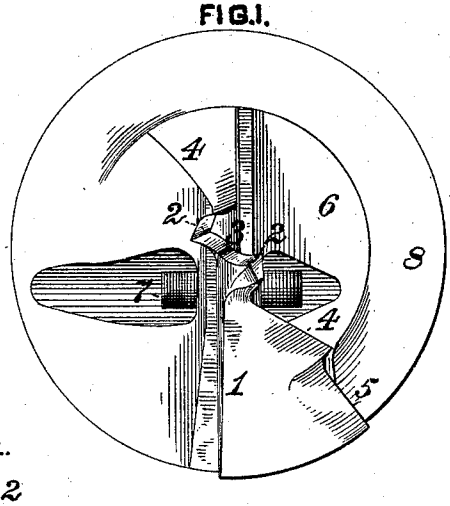


FIG. 2.

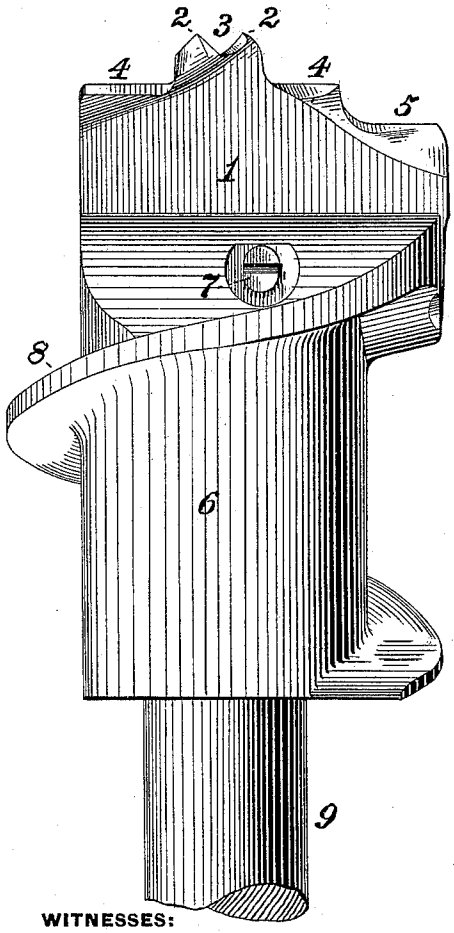
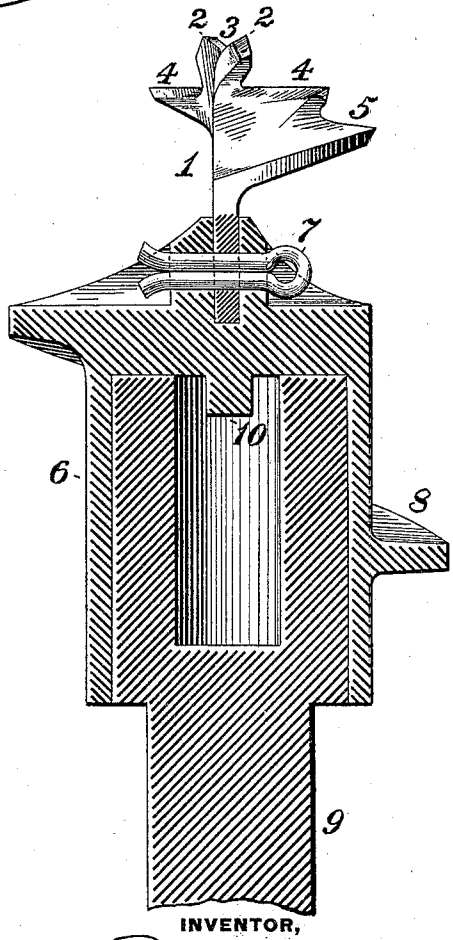


FIG. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN E. CARTER, OF KNOXVILLE, ALLEGHENY COUNTY, ASSIGNOR TO JOHN S. SCULLY, OF PITTSBURG, PENNSYLVANIA.

CUTTER FOR MINING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 387,144, dated July 31, 1888.

Application filed April 24, 1888. Serial No. 271,662. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. CARTER, a citizen of the United States, residing at Knoxville borough, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Cutters for Mining-Machines, of which improvement the following is a specification.

The object of my invention is to provide a rotary cutter for boring into seams of coal or other minerals, which shall present the advantages of simplicity and economy of construction, facility of insertion in and removal from its socket, and of regrinding when worn, and easy and rapid action and reduction of friction in operation.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is an end view, in elevation, of a cutter embodying my invention; and Figs. 2 and 3, side views, taken at right angles one to the other, of the same, Fig. 3 showing the head or socket of the cutter in section.

In the practice of my invention I form from a flat plate of steel a cutter, 1, having two cutting-points, 2 2, located on opposite sides of an intermediate recess, 3, which is concentric with the axis of the stem or spindle 7, to which the cutter is secured and by which it is rotated, the object of the provision of said separated cutting-points being to effect by the location of the same outside the center a more rapid preliminary action upon the material than is attainable by the comparatively slow motion of a single central cutting-point. A broad lateral cutting-lip, 4, having a cutting-edge substantially perpendicular to the axis of the cutter, is formed thereon exterior to and in a plane below each of the cutting-points 2, and a supplemental cutting-lip, 5, having a corresponding cutting-edge, is formed upon the cutter exterior to one of the cutting-lips 4 and below the plane thereof—that is, at a greater distance from the cutting-points 2. The cutter is secured in a groove in a head or socket, 6, in any suitable manner—as by a key or split pin, 7—the head being fixed upon a spindle, 9, to which rotation is imparted from the driving-shaft of the machine. The connection of the head and spindle may be effected by a transverse tenon or projection, 10, formed upon the inside of the head and engaging a corresponding recess or recesses in the end of the spindle, which fits accurately within the head. A helical clearing-thread, 8, may be formed upon the periphery of the head for the purpose of carrying away the fragments of material detached by the cutting points and lips.

In operation the cutting-points 2 rapidly and easily effect the preliminary boring and form an opening in the material acted on, which is thereafter enlarged by the lifting action of the main cutting-lips 4, and further enlarged to the maximum diameter of bore by the subsequent similar action of the supplemental cutting-lip 5.

It will be seen that the cutter can be easily and cheaply manufactured and readily ground when worn, and also that it may be readily secured in and removed from its head or socket from time to time as required.

I claim as my invention and desire to secure by Letters Patent—

A cutter having two cutting-points located at opposite sides of a central recess, a broad lateral cutting-lip located in a plane below each of said cutting-points, and a supplemental lateral cutting-lip located exterior to and in a plane below one of the cutting-lips first specified, substantially as set forth.

In testimony whereof I have hereunto set my hand.

EDWIN E. CARTER.

Witnesses:

J. SNOWDEN BELL,

R. H. WHITTLESEY.